

A New *Phanerotoma* from California

(Hymenoptera : Braconidae)

L. E. CALTAGIRONE

University of California, Berkeley

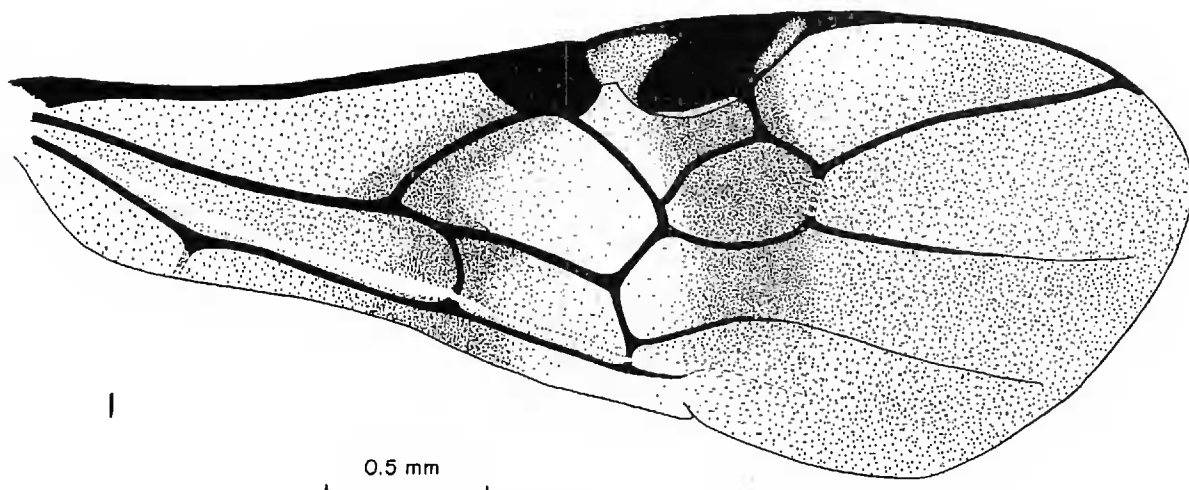
A series of specimens of *Phanerotoma* has been reared from the cocoons of the phycitid, *Paramyelois transitella* (Walker), by Mr. Douglas W. Price from the Department of Entomology, University of California, Davis. This material was obtained from almond nuts collected in the vicinity of Arbuckle, Colusa County, California. Superficially the parasites look similar to *Phanerotoma flavitestacea* Fischer, but a careful analysis of the morphological characters indicates that they are a different and undescribed species.

Phanerotoma flavitestacea was imported from Israel in 1962 (Caltagirone, Shea, and Finney, 1964) and colonized in the Arbuckle District in 1963 against the navel orangeworm, *Paramyelois transitella*. It has apparently established itself in the release area. To facilitate the recognition of both species in the evaluation of the natural enemies of the navel orangeworm, it seems advisable to describe this new species at this time.

***Phanerotoma inopinata* Caltagirone, new species**

Length about 4.5 mm.

FEMALE.—*Head* seen from above quadrate, 1.66 times as wide as long (varying from 1.54 to 1.64 in the female paratypes) (length measured from the anterior margin of the antennal sockets to an imaginary, transverse, vertical plane touching the most posterior part of the temples); *eyes* large, almost hemispherical, salient, their longest diameter 2.06 the length of the ocellular line (varying from 2.0 to 2.26 in the paratypes), with very short sparse hairs; *face* 1.58 as wide as long from the base of antennae to the base of clypeus (varying from 1.56 to 1.59 in the paratypes), finely transversely rugulose, uniformly covered with white, dense, short hair, with a broad, inconspicuous, median longitudinal elevation that originates just below the antennal sockets; distance between the antennal sockets 0.73 of the distance between the anterior tentorial pits (varying from 0.67 to 0.74 in the paratypes); *clypeus* 1.93 times as wide as long (varying from 1.83 to 1.93 in the paratypes), with the apical tenth slightly projected, apical margin evenly arcuate with three minute teeth medianly, the distance between the apices of the lateral teeth 0.35 the width of clypeus (varying from 0.33 to 0.36 in the paratypes), finely rugulose punctate, hairy, some hairs near the apical margin conspicuously longer; *genae* 0.65 the width of mandible at base (varying from 0.70 to 0.86 in the paratypes); *temples* convex, not receding, 1.07 as wide as length of ocellular line (varying from 1.0 to 1.15 in the paratypes) finely, vertically striated; *occiput* excavated, the excavation at the uppermost part of the occipital carina as deep as length of the ocellular line (varying from 0.82 to 1.0 in the



EXPLANATION OF FIGURE

Fig. 1, *Phanerotoma inopinata*, female, right forewing (drawn from paratype).

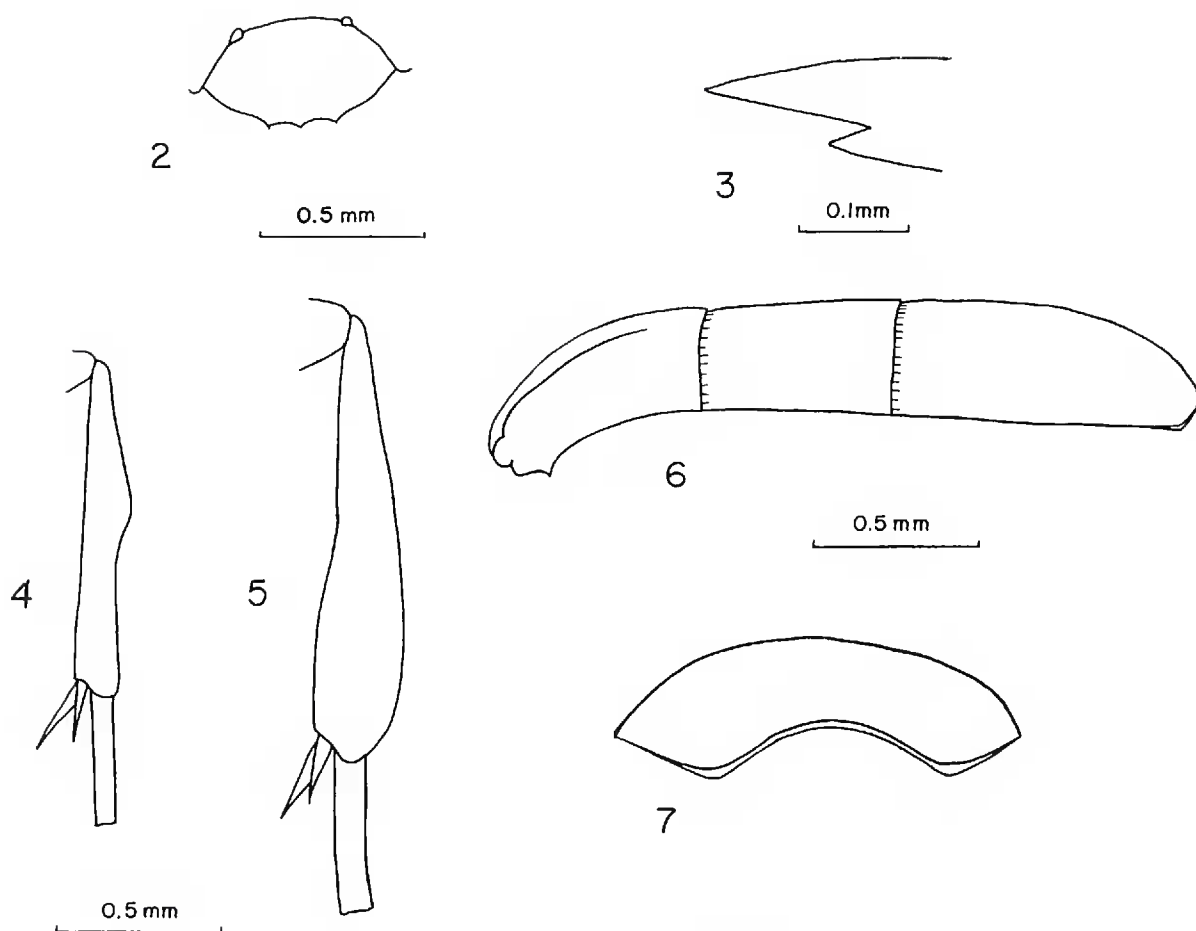
paratypes); *vertex* and *frons* coarsely transversely rugulose; *ocelli* forming an equilateral triangle, largest diameter of lateral ocelli 1.5 the length of the posterior interocellar line (varying from 1.33 to 1.85 in the paratypes), and 0.43 the length of the ocellocular line (varying from 0.43 to 0.5 in the paratypes); *mandibles* bidentate, with the apical half slender, width just behind the subapical tooth 0.3 the width at base (varying from 0.39 to 0.43 in the paratypes), subapical tooth hardly one-half as long as the apical tooth is wide at base, displaced basad so that the free tip of apical tooth is 0.44 the width of mandible at base (varying from 0.48 to 0.52 in paratypes); *antennae* inserted opposite upper fourth of eyes, 23-segmented, scape 2.3 times as wide as long (varying from 2.1 to 2.3 in the paratypes), first funicular segment slightly longer than second, second and third subequal, fourth slightly shorter than third, all 15 basal funicular segments longer than wide, the apical five moniliform.

Thorax narrower than head; *mesoscutum* evenly rounded anteriorly, opaque, granular, covered with short, thin hairs, notaulices faint, extending nearly to middle, lateral lobes slightly raised; furrow between mesoscutum and scutellum narrow and deep; *scutellar triangle* shiny, finely longitudinally striate punctate on disc, covered with short, fine hairs except at apex, distinctly foveolate at base (10 pits in the type, varying from 8 to 11 in the paratypes), apex and a transverse strip along posterior margin of scutellum bare, shiny, and polished, sides of the scutellum declivous, coarsely longitudinally striated; *postscutellum* coarsely longitudinally striated, with a smooth, shiny posterior margin; *mesopleurum* finely closely punctate, prepectal carina becoming foveolate dorsally, an ill-defined, crescent-shaped, rugulose area on disc; *propodeum* 0.85 times as long as first tergite (varying from 0.77 to 0.86 in the paratypes), uniformly convex, coarsely rugose, with an ill-defined transverse carina; *forewings* a trifle longer than length of thorax and abdomen together; radius originating in the apical third of stigma, length of first abscissa 0.57 that of second (varying from 0.57 to 0.71 in paratypes), second abscissa of radius 1.21 the length of second intercubital (varying from 1.20 to 1.67 in paratypes), third abscissa of radius slightly curved toward costa, recurrent vein received at base of second cubital cell, nervulus postfurcal for 0.75 its length (varying from 0.77 to 1.0 in paratypes), anal cross vein present,

faint towards margin; *middle tibia* straight ventrally, gibbous dorsally, the gibbosity rather conspicuous, on basal half of tibia, inner tibial spur 0.59 the length of basitarsus (varying from 0.51 to 0.56 in the paratypes); *hind tibia* moderately clavate, 5.7 times as long as thick (varying from 5.0 to 5.4 in paratypes).

Abdomen oval, 1.12 times as long as thorax (varying from 1.12 to 1.15 in paratypes), 1.85 times as long as wide (varying from 1.74 to 1.79 in paratypes), 0.4 as deep as wide (varying from 0.38 to 0.47 in paratypes); first and second tergites subequal in length, third 1.36 times as long as second (varying from 1.23 to 1.42 in paratypes), with an apical, moderately deep, wide emargination; carinae on first tergite reaching beyond the middle; first and second tergites coarsely longitudinally striate, third finely striate; ovipositor barely projecting beyond margin.

Tawny, apical ten antennal segments, eyes, and ocellar triangle black; tip of mandibles, and shining polished areas of scutellum and postscutellum reddish brown; mesoscutum with a blackish hue; palpi, prothorax, fore- and middle legs, hind coxae, a ring on middle of hind tibiae, and most of first and second tergites paler; third tergite reddish; apical third of hind tibiae brown. Wings hyaline, parastigma brown, stigma brown with base, apex, and narrowly along posterior margin concolorous with wing membrane; an infumated transverse band from parastigma to anal margin including basal vein and nervulus, and another from stigma including most of second cubital cell.



EXPLANATION OF FIGURES

Figs. 2-7, *Phanerotoma inopinata*, female. 2, clypeus. 3, tip of left mandible. 4, left middle tibia. 5, left hind tibia. 6, abdomen (carapace), lateral view. 7, third abdominal segment, rear view (drawn from paratype).

MALE.—Similar to female in general structure and coloration; all funicular segments longer than wide, apical margin of third abdominal segment with at most a shallow emargination. Some other characters in the paratypes as follows: longest diameter of eye varying from 1.82 to 2.04 times the length of ocellular line; face varying from 1.66 to 1.85 times as wide as long; clypeus varying from 1.82 to 2.2 times as wide as long; distance between lateral clypeal teeth varying from 0.31 to 0.38 the width of clypeus; longest diameter of lateral ocellus varying from 1.22 to 2.36 times the length of the posterior interocellar line.

Holotype female.—FRENZEN ROAD, 6 MILES WEST ARBUCKLE, COLUSA COUNTY, CALIFORNIA, emerged in laboratory, host collected winter 1964 (D. W. Price); deposited in the California Academy of Sciences, San Francisco.

Paratypes: one female, same data as type; two females, same locality and collector as type, emerged in laboratory 18 January 1964, host collected 18 December 1963; two females, Hillgate Road, 4 miles west Arbuckle, Colusa County, California, emerged in laboratory 26 February 1964, host collected 29 January 1964 (L. E. Caltagirone); one male, same data as type; three males same locality and collector as type, emerged in laboratory 18 January 1964, host collected 18 December 1963; one male, Hillgate Road, 5 miles west Arbuckle, Colusa County, California, emerged in laboratory 18 January 1964, host collected 18 December 1963 (D. W. Price); three males reared in laboratory, progeny of the paratype emerged on 26 February 1964.

Host: *Paramyelois transitella* (Walker), Lepidoptera : Phycitidae.

Biological observations: This is an egg-larval parasite; the egg is laid in the host's egg, the larva completes its development after the host larva has spun the cocoon; pupation occurs in a cocoon spun by the larva inside that of the host.

Phanerotoma inopinata differs from *P. flavitestacea* as follows:

First abscissa of radius longer than half the second; recurrent vein received at base of second cubital cell; distance between lateral clypeal teeth one-third the width of clypeus; sides of scutellum and postscutellum tawny, concolorous with rest of notum	<i>inopinata</i> Caltagirone
First abscissa of radius shorter than half the second; recurrent vein either interstitial or prefurcal; distance between lateral clypeal teeth less than one-fourth the width of clypeus; sides of scutellum, and sometimes of postscutellum, dark brown	<i>flavitestacea</i> Fischer

LITERATURE CITED

- CALTAGIRONE, L. E., K. P. SHEA, AND G. L. FINNEY. 1964. Parasites to aid control of navel orangeworm. California Agriculture, 18 (1): 10-12.